



THOMAS G. NEWMAN,
EDITOR.

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A Clergyman, who is also a bee-keeper, sends us a rhyme, which reads like this:

Please give no rest
To Rev. R. West,
'Till he with zest
Grants your request.

To which we add:

Let him do his best—
Counteract the jest—
Or he'll be non est,
When comes the law test.

Since the above was put in type, and just as this paper is ready for the press, we have received a letter from the Rev. Robert West, in which he intimates that the next issue of the *Advance* will contain something that will set the matter right. He adds: "I sincerely regret if I have misrepresented any honest industry." We shall look with interest for his next week's paper, and hope that those newspapers which have copied the slanders on the industry of bee-keeping, will also copy the retraction—if such is made in the *Advance*. We have no ill-will towards Mr. West, and only ask simple justice for our pursuit.

Frame Flyers, for taking frames out of hives, or moving them. This is the latest tool received at our Museum. They are gotten up by John M. Jones, Palmyra, N. Y. The tool is made of galvanized iron, and can be utilized in many ways. It has a long claw for loosening frames, a hook, which may be used for carrying other frames besides the one held by the flyers, and it is supplied at a very moderate cost—by mail, for 40 cents.

Frank Leslie's Popular Monthly for February is all that its patrons can desire. The articles vary in character and treatment, are all interesting and timely, and all well illustrated. Mr. Croffut's article on the late William H. Vanderbilt gives a striking picture of the career and life of the greatest American millionaire, and the reader can judge for himself of the man, his palace, his gallery, his stables and his tomb.

To any One sending us one new subscriber with their own renewal (with \$2.00), we will present a copy of the new "Convention History of America."

The Rural Canadian for February is brimful of good things. In the department of "Bees and Honey," we find among other things of interest, the following item concerning Father Langstroth at the Detroit Convention:

What a benignant face it was that smiled upon us from the platform, showing how "the grand old man" enjoyed himself, to see the boys enjoying themselves! The poet Ossian says: "Old age is dark and unlovely." No; not always. We have seen an example of it bright, cheery and beautiful, and it will often re-appear in memory when the vision itself has disappeared from earth. May the day be yet far distant on which that catastrophe shall happen! "Touch him gently, Father Time."

Concerning Heddon's new book and management, it remarks thus:

Hardly has the new year dawned when out comes Mr. Heddon, like a Jack-in-the-box, with a new hive and a new book. Not since the discovery of the movable-frame has there been such a turn in the wheel of progress. We have been fiddling and fumbling with single frames, and have meddled and meddled with our bees until "confusion worse confounded" has been the condition of affairs in many an apiary. Now, lo and behold, the simple principle of handling hives instead of frames has been enunciated, and it will revolutionize chaos! There is hardly a needful manipulation in the apiary but can be done in a twinkling on the new Heddon system. It is original and unique. Instead of one cumbersome hive, we have two halves, each complete in itself. Instead of one clumsy frame, we have two little shallow ones, with closed ends, made fast by thumb-screws, which can be loosened as quickly as you can say "Jack Robinson," when necessary, which it seldom will be. Do I want to reverse frames? I have only to tip over a half-hive. Do I want to make an artificial swarm? I remove a full half-hive and replace it with an empty one. Do I want to get rid of queen-cells, and prevent swarming? I upset the half-hive. Queens cannot be reared standing on their heads! If I wish to make assurance doubly sure, I can cut out queen-cells with my pocket-knife, inside of a few seconds. Do I want to contract the brood-chamber? I shake the bees out of a half-hive. Is it desired to force the bees into section-boxes? Remove half-hive, shake the bees out of it in front of the other half, and put on a case of empty sections. Do I want to enlarge the brood-nest? I take the top half-hive, in which is the surplus honey, and make the bottom half-hive the top one, put on a section-case, if I go in for comb honey, or comb foundation, if I wish to extract, and up goes the surplus honey, doubling the brood-nest. Do I want to form nuclei, rear queens, or make a home for an overplus of bees? The half-hive is just the thing. Am I preparing for winter? I take a half-hive, supplied with stores, run in the bees, remove the bottom-board, set the little squat receptacle over my hopper-stand, pack chaff around and over it, and leave them to hibernate, have a flight, rear brood, eat pollen, or anything else at "their own sweet will," until the advent of spring. Or I carry the half-hive into the cellar, regulate the temperature, and "leave it be."

Geo. W. Meade & Co., of San Francisco, Calif., have issued their annual Review of the Crop of Honey, from which we extract the following:

The honey product of 1885 was: Extracted, 1,500,000 pounds; comb, 750,000 pounds; beeswax, 80,000 pounds; raisins, 470,000 20-lb boxes.

We could scarcely expect the crop of extracted honey of 1885, from various adverse circumstances, to equal the output of 1884, which was a phenomenal honey year, but we make a very respectable showing nevertheless.

Like extracted, and for the same reasons, the product of comb honey of 1885 is considerably less than that of 1884, but unlike the extracted there has ruled such a brisk demand on Eastern account for our comb honey that we may safely say the bulk of the crop has already been marketed, and at prices all the way from 25 to 100 per cent.

over the figures obtained in 1884. While the output, therefore, in pounds, fell short from the year previous, in actual dollars and cents, a large portion of this shortage has been covered.

To still further increase and extend the sale of California comb honey, we again repeat our former suggestions, that a one-pound section be adopted instead of the two-pound now so generally used, and that at least one-half of the cases be made to hold but 30 pounds instead of making them all 60 pounds, or thereabouts, as is now the custom.

California honey, both comb and extracted, is now recognized everywhere as the finest produced in the world; and while bad seasons and low prices will be met from time to time, on the whole the bee-industry of this State, one year with another, promises as fair returns for the labor and capital invested, as any other growing industry of the Golden State.

Hunt's Adulterations received much attention in the BEE JOURNAL for 1884, on pages 475, 724, 787 and 812. Mr. T. L. Von Dorn, President of the Nebraska Bee-Keepers' Society, had the so-called honey tested, and the result was published. Mr. Hunt denied the adulteration, and the Marshall county, Iowa, Society proposed to have it re-tested, and we agreed to publish the result of that test, but so far no such matter has been offered us for publication—though it is over a year since. Now Mr. Von Dorn has sent us a "statement" of the proprietor of the Townley House, at Lincoln, Nebr., and its clerk, Mr. Adams, who says that Mr. Hunt inquired of him where he could purchase glucose which he desired to mix with honey he had for sale; that he did procure it and sold the Townley House 5 gallons of the mixture, claiming that it was just as good as the pure article, and that but few could discover the difference. Doubtless Mr. Von Dorn has acted for the interests of bee-keepers in the matter, but it must be said, however, that the Townley House proprietor bought the mixture (not as pure honey, but an adulteration), knowing its true character. This statement we make in justice to all concerned, and now the subject is dismissed from our columns.

New Price-Lists have been received from the following persons:

- J. M. Jenkins, Wetumpka, Ala.—20 pages—Implements in Bee-Culture.
- A. B. Howe, Council Bluffs, Iowa.—20 pages—Bee-Keepers' Supplies.
- D. A. Fuller, Cherry Valley, Ills.—4 pages—Bee-Keepers' Supplies.
- Oscar F. Bledsoe, Grenada, Miss.—6 pages—Queen Breeder.
- E. T. Lewis & Co., Toledo, O.—2 pages—Honey Extractor.
- F. A. Snell, Milledgeville, Ills.—16 pages—Apiarian Supplies.
- Elvin Armstrong, Jerseyville, Ills.—24 pages—Crown Hive, Bees, and Apiarian Implements.
- J. E. Pryor, Dexter, Iowa.—8 pages—Bee-Keepers' Supplies.
- J. W. K. Shaw & Co., Loreauville, La.—4 pages—Early Southern Queens.
- Hutchinson & Taylor (W. Z. Hutchinson, Rogersville, Mich., and R. L. Taylor, Lapeer, Mich.)—4 pages—Bees, Queens, Comb Foundation, etc.
- Frank A. Eaton, Bluffton, O.—2 pages—Italian Bees and Queens.
- Joseph E. Shaver, North River, Pa.—1 page—Bee-Keepers' Supplies.
- A. J. Norris, Cedar Falls, Iowa.—5 pages—Italian and Carniolan Bees.

Any one desiring a copy of either of them, can obtain it by sending a postal card to the address as given above.



WITH
REPLIES by Prominent Apirists.

Reversible Frames.

Query, No. 204.—Do you consider the reversible frame a good thing? If so, what is the best and cheapest way to make them? Would it pay to change the frames of 60 colonies?—J. C., Ind.

Go slow in adopting radical changes in bee-keeping, is my advice, *especially to beginners*. Let the old, experienced bee-keepers thoroughly test these novelties first.—H. R. BOARDMAN.

It may be in the hands of the experienced comb-honey producer. Change the frames of a very few colonies, and try them, and if you approve of the change, then do it; but go slow until you can prove by practical experience whether you want to use reversible frames.—H. D. CUTTING.

No. Reversing will do for people who want all the honey in the supers, and wish to feed their bees after the crop. We want our bees to have enough honey left in the brood-chamber to live on, and breed without feeding. Reversing has been practiced in Europe for scores of years, and is generally abandoned.—DADANT & SON.

Yes, but I consider a reversible hive of far greater value. As to which style of frame is the best, if a reversible hive is not used, I am not posted. I shall change more than 60 hives next season, and would not do so unless I thought it would "pay."—W. Z. HUTCHINSON.

No, I do not. I do not deny that an advantage is gained in reversing by bringing the brood up close to the sections (if it is not already up close, as it generally is in the shallow frame at the proper time); but the advantage is not so great as to warrant the time and trouble required to do it. There are many annoyances as from uneven combs, propolis, etc., that make the whole operation disagreeable, besides disturbing the colony in their work. I further consider that there are solid reasons against inverting hives. I cannot conceive of a circumstance in which I should want to either reverse brood-combs or invert hives. The necessity for it certainly cannot exist with a shallow-frame hive.—G. L. TINKER.

For myself I should not make the change inquired about. I can succeed in gaining all that is claimed by the advocates of reversible frames in an easier way. Invertible hives and reversing frames will both have their day and then play out, in my opinion.—J. E. POND, JR.

I am not prepared so say that I do. I have frames, and sectional parts of hives in my apiary that can be readily inverted, but I can see no rational reason why it should be done, except for the one short job of having the combs securely fastened in the frames.

In fact, I have seen but two arguments in favor of inverting frames, or hives, that are worthy of serious thought, and the exception I have named above is one of them. My answers to your concluding questions will be found on another page.—G. W. DEMAREE.

1. So far I have had no use for reversible frames. 2. Try 1 or 2 of the 60 with reversible frames, and then if you like them and think it will pay, you can change the other 58. Remember that practical experience is the best teacher in all of these things.—G. M. DOOLITTLE.

I have not decided to use any such frames yet, because I think that I can have the principal advantages without reversing. I should, however, be not greatly surprised if, five years from now, all my frames were reversible; and still less surprised if others gave up their use. Reversible hives have some advantages that reversible frames do not possess, and if I ever go into the reversing business it will likely be in that direction.—C. C. MILLER.

Of all the suspended reversible frames that I know anything about, I prefer the one described on page 9 of the AMERICAN BEE JOURNAL for 1885. If I did not prefer that one I should use the one I did prefer. After using thousands of them for two seasons, I never expect to use frames that will not reverse.—JAMES HEDDON.

1. I do decidedly. 2. I think so, but you had better try a few first and see if you think so. I tried them for one year, then changed part, and at the end of the second year I resolved to change all. Now comes the reversible hive, which will make me wait till I try it.—A. J. COOK.

Carniolans vs. Italians.

Query, No. 205.—Is the Carniolan race of bees any better than the Italian bees?—F. W.

Those which I had were not as good.—G. M. DOOLITTLE.

My experience with them has been too limited to enable me to say that they are better.—W. Z. HUTCHINSON.

The reputation of the Carniolans for swarming is a serious objection.—C. C. MILLER.

That is a question on which authorities differ. Time will tell.—A. J. COOK.

I never have tried them. They belong to the dark or black race of bees, and all black bees are inferior to the yellow bees.—G. W. DEMAREE.

We do not think so. We tried them in 1876, and discarded them. They are black bees, rather large, and quite prolific.—DADANT & SON.

If they are a better race of bees than the Italians, they have not yet proved themselves so to be. They are essentially hybrid bees that the inbreeding of a thousand or more years of natural selection has failed to produce uniform markings.—G. L. TINKER.

I do not know just how the races that you mention compare, because they are different in so many characteristics. But when the Carniolans are compared with the best Italians or German bees, I believe that the Germans will prove to be the best.—JAMES HEDDON.

They are said to be far more gentle, and equally as good honey-gatherers; the queens fully as prolific, and the workers very hardy indeed. The only drawback (if it is such) is said to be that they have a strong inclination to throw out swarms during the honey season. This last, I think, is owing to their nature not being well understood.—J. E. POND, JR.

Dark Capping of Honey.

Query, No. 206.—Why is my honey capped over so as to appear so dark? It seems to be of good color and nice flavor, but it is capped over so very darkly as to be unsalable. I practice both side and top storing.—H. J., Mass.

I should like to know more of the particulars before deciding. There may be something in the strain or variety of bees.—W. Z. HUTCHINSON.

Because the cells are full and the honey touches the cappings. Wherever the honey does not touch the cappings, it looks lighter.—DADANT & SON.

If the combs look watery it is because the honey is filled too close to the cappings, and if not caused by dampness, but comes so from the hive, you had better change your strain of bees. If the cappings themselves are dark, like old comb, it may be the surplus is too near the brood-combs, and the bees carry some of the dark wax from the latter to the surplus.—C. C. MILLER.

Probably it is fall honey. Perhaps it remained in the hive too long and was soiled by the bees. It hardly if ever pays to sell honey in the comb that is capped in the fall. It is better to extract it and use the combs for light honey the next season.—A. J. COOK.

It is impossible without a sample of the honey to do more than guess. It may be darkened by being travel-stained, or the honey may be swelled against the cappings; or, if old dark combs were in the surplus department it might be mixed with the cappings.—H. R. BOARDMAN.

Perhaps the bees used wax taken from dark brood-combs to seal the surplus honey with. I have seen newly built brood-combs that were near to old black combs show dark capping as though the bees had drawn on the old combs for wax to cap them with. If you had taken the trouble to uncap a section and extract the honey, you could have seen whether or not only the capping was of dark color.—G. W. DEMAREE.

When I used side-storing hives I had the same trouble. I have never been able to get white capped honey at the side of a hive, or at any point in the hive where the field workers

collect for the night after their day's work is done.—G. L. TINKER.

Probably because the honey was left on the hive for some time after the capping is done. Fall honey, as a rule, is capped darker than earlier yields. The warmer the weather and the sooner the honey is removed after being capped, the lighter the cappings will be found.—J. E. POND, JR.

There might be several reasons, the most common one being that the cells were filled too full. This is not likely the trouble in your case, if your bees are Germans, or have a dash of German blood in them.—JAMES HEDDON.

Certain strains of bees do this, and I found last summer that even the brown bees did such work when getting honey from Alsike clover. I never saw such work when honey was coming in from basswood or teasel, no matter what kind of bees were kept.—G. M. DOOLITTLE.

CORRESPONDENCE

Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark \odot indicates that the apiarist is located near the centre of the State named: \odot north of the centre; \ominus south; \oplus east; \ominus west; and this \odot northeast; \ominus northwest; \oplus southeast; and \ominus southwest of the centre of the State mentioned.

For the American Bee Journal.

The Origin of Honey, etc.

DR. J. P. H. BROWN.

Query, No. 189, involves so much of the occult in vegetable chemistry and physiology, that answers can only be based on analogical reasoning. It cannot for a moment be presumed that the honey is in the ground ready to be pumped up into the flower. Prof. Johnson, in his work on "How Crops Grow," says:

"The sap in all cases consists chiefly of water. This liquid, as it is absorbed, brings in from the soil a small proportion of certain saline matters—the phosphates, sulphates, nitrates, etc., of the alkalies and alkali-earths. It finds in the plant itself its organic ingredients. These may be derived from matters stored in reserve during a previous year, as in the spring, sap of trees; or may be newly formed, as in summer growth.

"The sugar of maple-sap, in spring, is undoubtedly produced by the transformation of starch which is found abundantly in the wood in winter. According to Hartig (*Jour. fur Prakt. ch.*, 5, p. 217, 1835), all deciduous trees contain starch in their wood and yield a sweet spring sap, while evergreens contain little or no starch."

This is, no doubt, the reason why the flowers of evergreens yield comparatively little honey. The *Evonymus*, a beautiful evergreen that hedges the walks of many a southern yard, often blooms profusely, but its flowers are rarely visited by honey-bees. Its nectaries secrete a resinous matter that emits a disagreeable odor, and are visited by flies and other insects, but by no bees. The deficiency of starch in this plant would preclude the formation of honey.

That the constituent elements, as well as the proximate elements of a plant, vary in proportion by the character of the soil and the moisture and condition of the atmosphere, is a fact fully demonstrated. Fruits are sweeter and better flavored in seasons when there is not too much rain, but just enough to sustain the fruit to full size and maturity. Melons grown on low, moist lands, or in wet seasons, contain less sugar than when grown on uplands with not too much rain. The same applies to the sweet-potato. Sugar-cane always yields more sugar and makes better syrup when the season is not too wet.

"The soil, or the supplies of food, manures included," observes Prof. Johnson, "have the greatest influence in varying the proportions of the ash-ingredients of a plant." Sweet-potatoes grown on sandy uplands contain more sugar and starch than those grown on flat, moist lands. My experience has been the same with the Irish potato—those on uplands being more mealy. The flavor of the grape is very much influenced by the fertilizers used. Melons fertilized by Peruvian guano are not as sweet nor as fine in flavor as those grown with stable manure.

Therefore, if the production of sugar in fruits and plants is so greatly influenced by wet, moisture, atmospheric conditions, and soil, we can safely infer that the organs of the flower that secrete the honey are affected by the same causes. True, the *rationale* is not well understood; but scientific investigation is destined to make plain many operations in nature that now seem to us inexplicable.

Augusta, \odot Ga.

For the American Bee Journal.

Convention at Meadville, Pa.

The Northeastern Ohio and Northwestern Pennsylvania Bee-Keepers' Association met at Meadville, Pa., at 11 a.m., on Jan. 20, President Mason in the chair.

The reports of the Secretary and Treasurer were read and approved; the annual dues were by vote reduced to 25 cents for the present year; and the name changed to "Northeastern Ohio, Northern Pennsylvania, and Western New York Bee-Keepers' Association," and the Constitution amended accordingly.

In the afternoon President Mason delivered the annual address, which was replete with good ideas; D. H. Lefever delivered an address of

welcome, which was replied to by D. Videto, in a happy manner.

The election of officers resulted as follows: President, C. H. Coon, New Lyme, O.; Secretary, J. H. Woodworth, West Williamsfield, O.; Treasurer, Geo. Spitler, Mosiertown, Pa.; 1st Vice-President, C. H. Wright, Conneautville. The President was instructed to appoint two vice-presidents from each county represented.

Andover, O., was chosen as the next place of meeting.

The first topic discussed was "Spring Management of bees, previous to the honey-flow." U. E. Dodge said that it was an important subject, for upon the way we manage at this time depends the whole question, as to profit. It is hard to tell what to do, and how to manage, as each colony differs from others, hence the impossibility of laying down any set rules. He winters his bees in a cellar, and is a firm believer in a warm temperature; he keeps the room in which his bees are wintered at a temperature of from 55° to 60°; and tries to keep his bees in the cellar until soft maples blossom. If it gets too warm he uses ice to keep down the temperature; he does not like to set his bees out until warm weather; he uses absorbents on the top of the bees (chaff and sawdust, mostly the latter). When he puts his bees out, if all right, he lets them alone; if weak, he feeds them and takes brood from such colonies as can spare it, to build up the weak ones.

By request, Mr. Dodge gave a description of his cellar, which was, in brief, as follows: A common cellar under the house in which he lives; has a room partitioned off in one corner, directly under the sitting room; has sub-earth ventilation, but has the pipe but 3 feet under ground, because the cellar was already built; if he had to do it again, would put the pipe near the bottom. He has a pipe connected with the pipe in the ground, which he has run some distance in the air, and in which he has a valve with which to regulate the temperature of the cellar; he also has a ventilating pipe extending from the room in the cellar to the stove-pipe. He has a large stove in his sitting-room, directly over the bees, in which there is a good fire continually; has never had the temperature fall below 42° in the coldest weather. He winters 85 colonies in this room; too many, he thinks; almost all his colonies have brood before he sets them out in the spring. He winters some out-doors, because he does not like to risk all in one place. His losses in the cellar have never exceeded 11 or 12 per cent., often none; while out-doors they were at times 20 to 25 per cent. He does not get as much honey as he would if he hired some help in the busy seasons, but it being almost impossible to get the right kind of help, he prefers to do with less honey.

D. Videto said that no person should expect 100 pounds of comb honey unless all queens are prolific. Drone combs must be removed; you want but few drones. Very few of his colonies came through the winter

strong. He had 120 colonies in the fall of 1884, and only one came through strong, had 24 weak ones, the remainder were dead. Some filled but two spaces, and some had no queens. They did not commence swarming until July 12. He bought 8 colonies. He had many combs of sour honey from those colonies that died which he fed gradually to the bees. Would never sell it, as people who bought such stuff once, would never want to eat honey again. His yield was between 2,900 and 3,000 pounds of comb honey, besides abundance of frames saved for winter and spring feeding, and 200 pounds of extracted honey. If bees are weak, he contracts the brood-nest to from 3 to 5 combs.

"Production of comb honey" was the next topic discussed.

D. Videto—How to manage to get the greatest amount of comb honey is an important question. "Successful bee-keeping is the securing of the greatest amount of honey out of each hive. To secure this swarming must be prevented. As it is almost impossible to prevent swarming, he lets them swarm, places the hive with the swarm where the old colony stood, placing the old hive just back of the new one. Lets them remain for 24 hours, then takes a frame of uncapped brood from the old hive and puts into the hive with the swarm; so each day until all the brood is in the new hive, the old colony being thus destroyed, swarming fever is destroyed. In 21 days all the brood is hatched, and a large force of workers are ready to gather honey. This is the way to do if you do not want increase. If increase is wanted, different method must be pursued.

U. E. Dodge lets them swarm naturally, and with the old colony and the increase, can get more honey than with one colony after Mr. Videto's plan.

Evening Session.—Topic: "Is it advisable to attempt to prevent swarming, when running for comb honey?"

M. E. Mason—It is not advisable.

Mr. Shepard—To prevent swarming bees want plenty of room. Some seasons he got large increase of colonies and little honey, while other seasons he got much honey and little or no increase.

Some discussion was then had on Italianizing, foul brood, cellar wintering, tiering-up, cleaning combs, breeding queens, etc.

SECOND DAY.

President Coon in the chair.

Mr. Videto said many claimed the cause of the depressed state of the honey market was owing to overproduction, which he was sure was not the case. He lays it at the door of the general business depression, etc. In order to sell we must put our goods in better shape, and not sell too soon.

Mr. McLean—Some seem eager to sell, and take off honey when but about two-thirds capped. He always sells by sample, and sells honey on its merits.

Mr. McGonnell could always sell his honey; he tries to have it in good condition.

Pres. Coon said that 2 years ago he had some honey very early, which he thought he could sell for a good price, but to his surprise others were ahead of him, but with an inferior article, not ripened and capped, which they were selling at 12½ cents per pound. He got disgusted and took his honey back home and realized 16 cents per pound for it. He cannot see why people act so with honey; they do not with other farm products.

Mr. Mason—The same laws govern the sale of honey as other products. If only a first-class article was offered for sale, a good price could be realized. He detailed his experience in building up a trade for honey, in Pittsburgh, where he shipped over six tons last season. When he went there he found the markets glutted, not with good honey, but with stuff which had once been good honey, but had been ruined in a cool, damp cellar. A person who buys a good article will buy again. Always sell honey for what it is. Never mix first and second-class honey in the same case, if you wish to keep up your reputation.

The question box was opened and a variety of questions answered.

Afternoon Session.—On motion, Art. III of the Constitution was amended so as to require only two vice-presidents from each county instead of four.

Wintering bees was the first topic discussed, and one of the most important, from the fact that nothing in apiculture is so uncertain as is the wintering of bees.

Mr. Sterrett does not see much difference between chaff and sawdust for winter packing. Has had equally good results with either.

Mr. See prefers buckwheat chaff.

Mr. Lefever had wintered bees without packing, but lost largely.

Mr. Herman uses chaff hives with 3 inches space. Uses buckwheat chaff for packing, and has lost but one colony in three years.

Mr. Videto thinks it is not all in packing, but in other conditions. Locality has much to do with it; as well as stores. Has packed, and in twelve years has three times lost all his bees. Has some in the cellar now. All should try both methods, and adopt that which is best suited to the locality.

Mr. McLean related an instance where bees were covered thickly with snow. Some were uncovered and some left in the snow; those that were uncovered died, the others came through all right.

J. H. Wright—In putting in comb for winter, put in alternately one heavy and one light, and out of 60 last winter lost one. Thinks his honey was better than some others, as he had no honey-dew.

After discussing several other topics the convention adjourned.

The Union Bee-Keepers' Association of Western Iowa will meet in Dexter, Iowa, on April 10, 1886, at 10 a.m. M. E. DARRY, Sec.

For the American Bee Journal.

The Reversible-Hive System.

DWIGHT FURNESS.

On page 71, Mr. G. M. Alves (after penning some well-worded sentences which show his high literary ability, and, if meant literally, his non-progressive tendencies), asks four questions in regard to the new Heddon hive. After a careful study of that hive, and some experience with the method of management to which it is especially adapted, I am fully convinced of its superiority, and I am now making 100 of the new hives for next season's use. I would answer those questions from my experience briefly, as follows:

1. No. The hive is quite simple. This question was probably inspired by the thumb-screws. These screws are just the thing for clamping together wide frames in any style of super. The fixedness of the different parts makes it, with its peculiar system of management, at once the simplest, speediest and best.

2. The new hive requires well seasoned lumber, carefully and accurately cut. It is all plain, straight work, however, and can be done on any first-class circular-saw table. Like all of Mr. Heddon's inventions, it possesses practicality in an eminent degree.

3. Yes, when by so doing they can diminish labor one-half; or, in other words, care for two colonies with the same labor now required by one. I believe that the new hive will enable us to do this. The cheaper the honey the more need for better fixtures. When made in large quantities, the new hives will cost not to exceed one-third more than the ordinary Langstroth hives. In retailing hives there is much expense besides the cost of making.

4. I think it is true, that Mr. Heddon's new method of horizontal interchanging of brood-combs will secure to us most of the advantages that we know by experience are realized by reversing. This is one of the brightest thoughts of the day, but as stated in his book, especially advantageous when used in connection with reversing. I do not know why Mr. Alves, or any one else should wish to transfer this principle to the Langstroth hive, when it is so much better carried out in the new hive as constructed by Mr. Heddon. Without connecting it with inversion, perfectly filled frames of combs are wanting, and we have nothing to take the place of interchanging, when contracting to one case—a system that I have thoroughly tested and prize highly. By this combination of the two systems we may be able to practically control swarming, for the first time in the history of bee-keeping.

The inventor claims that in the construction of the new hive he combines nearly all the advantages of both closed-end and suspended frames, and embraces but few of their peculiar disadvantages. To echo the words of Dr. C. C. Miller, it seems to me these

are such self-evident truths that it needs no experiment to know them.

I will not mention the many other improvements in manipulation, for which the new hive is especially adapted, and which cannot be carried out with suspended frames, or any others unless arranged substantially as Mr. H. has them.

In the grand march of progress, Mr. Heddon has taken a long stride in advance of us all, and, like all others who get "ahead of the crowd," he will be the target for a volley of criticism, sarcasm and ridicule from the elbowing mass in the rear.

Furnessville, Ind.

Maine State Convention.

The Maine State Bee-Keepers' Association met in convention at Skowhegan, Me., at 1 p.m., on Jan. 19, 1886, President J. B. Mason in the chair, who gave his annual address.

An essay was read by Isaac Hutchins, upon the "Coming Bee." Mr. Hutchins advocated a cross between the German and Italian races, for the "coming bee."

F. O. Additon read an essay entitled, "Of what practical benefit are the improvements in bee-keeping, and to what extent may bee-keeping be carried?"

An essay was read by L. F. Abbott, of the Lewiston Journal, entitled "Pure Honey."

Are drones of any use, other than for fertilizing queens?

Various opinions were expressed—some thinking that they may help in evaporating and sealing the honey; also in keeping up the warmth of the hive. Others thought that they were of no use other than for fertilizing queens.

Is stimulative feeding in the spring desirable?

All favored it. It was decided that feeding should begin as soon as pollen comes in freely, and to feed inside the hive.

Are the yellow bees an improvement over the blacks?

It was decided that they were.

How can we best develop a home market for our honey?

Many related their experience in developing a home market; the essential points being to carefully grade the honey, and for the bee-keeper to place his name upon every package sold; to educate the people to eating honey, and if necessary to introduce it; that is to say, take it from house to house.

In what way can swarming be best controlled?

Each bee-keeper seemed to have a method of his own to control swarming; but it was the general opinion that all after-swarming should be checked.

To what extent should comb foundation be used?

It was decided best to use full sheets in the brood-chamber, and that all frames should be wired.

It was resolved that bee-keepers should sow Alsike clover for its honey

and forage, and recommend it to farmers for hay.

Mr. Cornforth said he could produce extracted honey for 15 cents per pound, easier than he could produce comb honey for 25 cents; and that he could sell ten pounds of extracted honey when he could sell one of comb honey, at their relative prices.

The following officers were elected for the ensuing year: President, James B. Mason; Secretary, Isaac Hutchins; Treasurer, W. H. Norton.

Jonathan Pike, John Reynolds, and F. F. Graves were to make arrangements with the State Agricultural Society for an exhibit of bees, honey, and apianian implements at the next State Fair.

J. B. Mason, Isaac Hutchins and L. F. Abbott were to arrange for the next meeting at Mechanic Falls, in January, 1887.

F. O. Additon, W. H. Norton and F. F. Graves were to use and decide upon the merits of the different reversible frame attachments.

WM. HOYT, Sec.

For the American Bee Journal.

Prospects for the Coming Season, etc.

E. J. BAXTER.

We had very cold weather again week before last and last week—from 24° to 27° below zero. The first 3 days of this week were very warm, comparatively—65° in the shade at noon. My bees had a splendid flight, and I find that *not one* of my 230 colonies has perished—possibly because they all had pollen in great abundance last fall when they were put into winter quarters. White clover is abundant, and looks vigorous; it has been growing some under the snow. If nothing happens to kill it out between now and the opening of spring, the *possibility* is that we will have a crop of white clover honey.

I am making preparations to greatly increase my apiaries the coming summer. I work nearly all of my apiaries for extracted honey, as I find that it pays me best. I will run only one apiary, this year, for comb honey. The great bulk of the increase of my apiaries is made by division. Last year I had only 12 natural swarms, and I made 90 by division, all being good and strong. I invariably use full sheets of foundation in the brood-frames, and if we have an average honey season this year, I expect to use at least 200 pounds of heavy foundation. I now use full sheets of foundation in all of my sections, and surplus frames, also, and I find, after repeated experiments, that it pays well.

I have tried hives with *deep* frames, and hives with *shallow* ones; *large* hives and *small* hives—8-frame Langstroth, and my experiments and observations have taught me that *large* hives with *deep* frames are the best and the most profitable every time. I could mention several facts to prove this, but I will give only the following one:

Last year we had a very poor honey season in this part of Illinois, as every one fully knows. Last spring I determined to work 30 colonies of my home apiary for extracted honey, and all the others for increase. I began to work early with the bees, so as to get them as strong as possible for white clover bloom. By the middle of May the most of the 30 colonies worked for extracted honey had their 10 frames (18 inches long and 10½ deep) almost covered with worker brood; and by the middle of July I had extracted 2,475 pounds of as fine white clover honey as was ever gathered—or an average of 82½ pounds per colony; while my neighboring bee-keepers, with 8-frame Langstroth hives, had scarcely anything—not enough, in fact, to make it worth the trouble to take it from the hives.

Nauvoo, Ills., Feb. 12, 1886.

The Wisconsin State Convention.

The Wisconsin State Bee-Keepers' Association met in Madison, Wis., on Feb. 4, 1886. President C. A. Hatch delivered his annual address, which brought out a discussion on "Wintering Bees."

Why is clover honey better for wintering bees than fall honey?

Mr. Elver—In the fall bees sometimes gather impure sweets from grape-vines, cider-mills, etc., while in clover time they find plenty of pure honey, and that only.

Frank McNay—I have found by experience that fall honey is as good as any in my locality.

F. Wilcox—Impure honey is not good at any time or in any condition. Fall honey is as good if not better, because it is thicker than clover honey, unless taken out and stored in a damp cellar, when it would absorb moisture and spoil.

Is clover better than basswood honey? Bees leave clover for basswood.

F. McNay—They go to the basswood because they get honey faster.

Mr. Elver—Basswood is as good as clover. I think it a mistake to feed sugar; pure honey is good enough.

Mr. France—I winter my bees on basswood honey. I fed 600 pounds of it on Aug. 1. I have 510 colonies, and extract once a week when the yield is good.

Mr. McNay read an essay on "Managing bees for producing comb honey."

F. Wilcox practices the tiering-up plan. He does not remove the sections as soon as finished, as he thinks that it ripens better and is not much soiled if full cases are kept on top.

Mr. Wilcox reported that the State Board of Agriculture had agreed to leave it with this Association to revise the premium list of the apianian department, and add 25 per cent. to the amount allowed last year. The President and Secretary were authorized to revise the list.

Mr. France warned the members against shipping honey to G. W. House, of New York, as he was irresponsible.

AFTERNOON SESSION.

The following officers were elected: President, C. A. Hatch; 1st Vice-President, Dr. J. W. Vance; 2d Vice-President, E. France; Secretary, F. Wilcox; and Treasurer, F. Minnick.

Mr. Daniher exhibited a bee-feeder which resembled a brood-frame without a top-bar, with a thin board on each side, the cracks and joints being waxed. He recommended candied honey as food, softening it with warm water when necessary.

Mr. Spangenberg exhibited a new implement for uncapping honey. It was like a small paddle three inches wide, with small steel wires one-fourth of an inch apart, driven in the end. The projecting wire was sharp, and curved like a cat's claw, to scratch open the cappings.

The following resolutions were then passed unanimously:

Resolved, That the bee-keepers of this State endeavor as far as possible to create a home market for their honey, so that there will be no need of seeking city markets in which to dispose of our surplus products.

Resolved, That we thank Mr. T. G. Newman, of Chicago, for his efforts in securing reduced rates of transportation on honey, and congratulate him upon his success.

Resolved, That we desire to express to Mr. Newman our sincere appreciation of his labor and zeal in fighting the glucose adulterators, and bringing to light their nefarious schemes against the interests of bee-keepers.

Resolved, That the bee-keepers of the State are urged to make more creditable exhibits at the next State Fair.

Dr. Vance read a well prepared essay on "Foul Brood," reciting the fact that he had since our last convention lost all of his bees by that disease. He related the experiments of Mr. Cheshire, of England, in treating the disease with phenol, and spoke very hopeful of the result of his researches.

Has there ever been any assessment of bees in the United States?

F. Wilcox—I am taxed on them.

Mr. Waller—In Richland county they are never taxed.

Mr. Elver—They pay a premium for keeping them in some parts of Europe.

Mr. Sanford—I think that bees ought not to be taxed.

F. McNay thought that bees ought to be taxed.

STATISTICS.—Twelve of the members present reported 781 colonies in the spring; 1,230 in the fall; 10,075 pounds of comb honey; 46,050 pounds of extracted honey.

From the census report for Wisconsin, taken June, 1885, we get the following: Number of colonies in the State, 51,917; pounds of wax produced the year preceding, 44,281; value of bees, \$247,481; pounds of honey, 1,432,766; value of the same, \$160,076.

Mr. Hatch—I can say of my own knowledge that the statistics of bees and honey was not complete.

The convention then adjourned.

F. WILCOX, Sec.

The Illinois Central Bee-Keepers' Association will hold its next meeting at Mt. Sterling, Ills., on Tuesday and Wednesday, Oct. 19 and 20, 1886.

J. M. HAMBAUGH, Sec.

For the American Bee Journal.

Do Bees Hear?

A. W. OSBURN.

There seems to me to be no doubt that bees hear; not only do I think they hear, but I have been placed in circumstances when I was fully convinced that they could hear, and hear quickly, too. While keeping bees in California, several times I have seen bees attack horses, dogs, etc., and from the time that the first bee attacked these animals, it would not be half a minute before there would be 10,000 to take part in the battle. Those that have never seen bees attack an animal in earnest, can form no idea how short a time it is before the object of their wrath is completely covered with the little stingers. Now if bees cannot hear, how do they communicate so quickly? The numbers and numbers of evidences that I see while handling bees constantly leads me to think that they can hear. At that particular time when they have decided to sting something to death, I would say do not attempt to liberate whatever they are wreaking their vengeance upon, for at that time they show no respect of persons. I tried it once, and I shall never try it again. Although I had a veil on, I was so badly stung that I had to go to bed—the only time in my life that they got the best of me to such an extent. Were it my own horse, dog or cow, and it could not get away itself, I would not take the chances for the price of a good many such animals. Talk about boiled down and concentrated wrath—the words do not express what one sees, when a large apiary of bees has fully decided to kill somebody!

Cuba, W. I., Jan. 25, 1886.

For the American Bee Journal.

Lamp Nursery for Queen-Rearing.

W. Z. HUTCHINSON.

As most bee-keepers are probably aware, the lamp nursery is simply a tin hive with double-walls, the space between the walls being filled with water, which is kept at a proper temperature by means of a lamp underneath. The one that I have was made by our village tinner at a cost of \$2.00. It is placed in the top of a box 4 feet high, the space between the outside of the nursery and the inside of the box being about one inch. Blocks of wood nailed in the corners of the box afford a support for the nursery. Strips of wood are fitted in between the upper edges of the nursery and box. The warm air not only strikes the bottom of the nursery, but has access to its sides. There is a wooden cover to the nursery with strips of cloth tacked to it to prevent the escape of heat at the joints. A thermometer is attached to the cover upon the inside, and a hole covered with glass is made in the cover, thus allowing a view of the instrument. I have

a large tin lamp that will hold one gallon of oil.

The nursery is kept in a closed room on the north side of the shop, and there is no trouble in keeping the temperature so that it will not vary more than 5°. Incubators for hatching chickens have an arrangement for controlling the temperature, keeping it at exactly the same degree. Such an attachment could be used in connection with a lamp nursery, but I hardly think it necessary, as the temperature in a colony of bees varies more than 5°. I believe Mr. Heddon keeps his queen-nursery in the cellar, and succeeds in keeping the temperature so that it varies only 1°. I try to keep the temperature between 90° and 95°. If it goes above 100° the queens are usually destroyed. I have never known them to be injured by a low temperature; and I have sometimes had it run down to 70°, when the light had gone out because the oil was all used sooner than I expected it would be. In fact, I once accidentally left a cell out-of-doors upon the north side of a hive, for two days, and when I discovered it the queen was just cutting her way out.

The nursery should be of such a size that several of the regular combs can be placed inside. When queens are reared by giving a comb of eggs to a queenless and broodless colony, there is usually a large number of cells upon the comb, and the queens will hatch before the workers, and it is advisable to brush the bees from the comb instead of cutting out the cells, and place the comb, cells and all in the nursery. When the cells are taken from a colony that has swarmed, it is usually better to cut them out, for the reasons that the cells are usually scattered about, only two or three upon a comb, and the eggs in the combs having been laid at different times, bees would be hatching out in large numbers in the nursery. I have been told that virgin queens would not kill one another unless they had first found and eaten food. Even if this were true, which I do not know, it would be difficult to take advantage of it, as, when whole combs are placed in the nursery there is certainly an abundance of food, while, if all cells were cut out they must first be cleaned up by allowing the bees to have access to them after they are cut out; otherwise there would be plenty of food available at the freshly cut edges.

The best way that I have found to avoid losses from young queens killing one another, is to examine the nursery often, as often, at least, as once in two hours, and cage or remove the hatched queens. By listening carefully, any queens that may be gnawing out can be heard. A window in the room can be readily shaded with a curtain; a hole in the curtain admits a ray of light; by holding a queen-cell before the ray of light entering a darkened room, the inmate can be easily seen; especially is this the case if the comb upon which the cell is built is new comb. The last thing in the evening I examine, by the light of a lamp, all of the cells. By holding

the cells in different positions between the light and the eye, the queens can usually be seen. Any queen that shows signs of hatching is put in an apartment by itself. To furnish these separate apartments, a "wide frame," the same size as an ordinary brood-frame, is divided by partitions into little "pigeon-holes." One side of this frame of little apartments is covered with a thin board, the other side with glass doors, one door for each apartment. Each door is "hung" with a cloth hinge pasted on, and is fastened shut with a catch made by driving a common pin partly in, then bending it over. To release the door the catch is turned in an opposite direction.

When I first began using the nursery, I took queen-cells from the bees as soon as they were sealed, or soon after; but this disturbing of the cells when the queens were so immature, resulted in so many maimed and crippled queens, that I soon abandoned the plan, and now I leave the cells until they begin to show a brownish color, which indicates that the queens are nearly mature. When the bees are given eggs that are just beginning to hatch, I remove the cells about the ninth day, and the queens hatch in two or three days.

The great object in using a lamp nursery is its convenience. It allows us to examine the cells at any time, which would be impracticable if the cells were with a colony of bees. If a young queen hatches out in a colony of bees, unless they have the swarming impulse, the remaining queens are destroyed, and it is quite a task to find the queen. If the cells are allowed to remain with the bees until they "turn color," I think that queens hatched in a lamp nursery are as good as any.

Rogersville, 6 Mich.

Read at the New York State Convention.

Does Bee-Keeping Pay?

WM. F. CLARKE.

At the recent Detroit Convention, an essay by Dr. C. C. Miller in discussion of the above question, was read. It only professed to open the discussion, which it did so effectually that a very lively debate sprung up, which was only closed by a resolution to lay the subject on the table, which, on motion, was carried. This action is usually taken by Legislative bodies, when a discussion is unfinished, or there seems no likelihood of arriving at a decision. The question is one of those concerning which much may be said on both sides without arriving at a satisfactory conclusion. After the amplest discussion, one can only look at the *pros* and *cons*, and judge for himself, so that the question really is, "Does bee-keeping pay me?"

It will simplify the matter very much if we start with a definition of the word "pay." Dr. Miller sets out to discuss the question solely from a pecuniary stand-point, but he decides it, so far as he *does* decide it, on totally different grounds. He states the

question at the outset in these terms: "Can I make as much money, in a series of years, at bee-keeping as I can at any other business?" He decides this question for himself in the negative. He says: "I am obliged to confess that I could make more money to give up bees entirely." In reply to the query, why he continues at the business, he replies, in effect, that it pays him otherwise than in dollars and cents. He says: "I like it. It keeps me out-doors, and is good for my health. It allows me to be with my family more than any other calling at which I could make as much, and for the privilege of these enjoyments, I am willing to pay the price of the additional money I would make at a more lucrative calling. Whether the price may not become too large for me to afford to pay, is an open question."

Now it is only in this broad and comprehensive light that we can fairly consider whether anything pays in this world. We are all the time investing more than money in our occupations. We call money the capital which we invest, but it is not all, nor indeed the most valuable investment that we put into our business. We embark *ourselves* as well as our money in whatever calling we undertake, and the most important question in regard to the calling we pursue, is its influence upon ourselves. Does it make us happy or miserable, better or worse, richer or poorer in those qualities that go to form a desirable character? At the conclusion of the auction sale of the fixtures of his saloon, "The Ship," in New York, Paul Boynton said: "Gentlemen, I thank you for helping me to leave a business I have felt to be a curse upon me ever since I entered it. I would rather cultivate bricks than touch the gin-trade again." It paid him in dollars and cents most likely, but it was a dead loss in its influence upon himself. A bright day will dawn on the world when the profits of all businesses are gauged by their intellectual and moral, as well as their pecuniary results.

Undoubtedly there are some occupations that have a natural tendency, apart from the motive under which they are followed, to make people selfish, grasping, narrow, ill-tempered, stolid, coarse, low, and grovelling. There are others that tend to uplift, ennoble, and improve the minds and characters of those engaged in them. Is it not patent to all the world that Wall Street stock jobbery tends to make the men who pursue it wild beasts of prey, and that the haunts of this kind of business are made hideous by the yells and howls of the predatory bipeds that prowl about in them, seeking whom they may devour? That kind of business may and often does pay in dollars and cents, but the more successful it proves in that line, the more serious and impoverishing is the loss of moral character involved in it.

A business *pays* in the broad sense of the term if, in addition to yielding a fair profit in money, it is conducive to health, cheerfulness, mental cul-

ture, growth in virtue, and home comfort. Without making invidious comparisons between it and other occupations, it may be safely affirmed that bee-keeping stands these varied tests well. It pays fairly, if properly carried on, as a money investment. Being pursued mostly in the open air during the pleasantest weather, it cannot but be promotive of health, and the cases are not rare in which invalids have been completely cured of former ailments by adopting this avocation. It is pre-eminently a calling that demands study, thought, investigation. It presupposes a high grade of intelligence. There is very little of mere routine about it. Constant observation of natural phenomena is essential to its prosecution. No business oftener brings one face to face with the why and the wherefore of things. An unreasoning bee-keeper must prove a failure, for success depends mainly upon judicious linking of cause and effect. So there is a constant exercise of thought going on, which is eminently favorable to mental improvement. A business, to be enjoyed, must be capable of awakening interest and enthusiasm in those who prosecute it, and there is no more fascinating occupation under heaven than this, to those who have a taste, as most people have, for observing the wise ways and wondrous habits of the animated tribes that people the earth. A bee-hive is a world of wonders in itself, and one never tires of watching the marvellous processes that are constantly going on before his eyes in the development of insect life and activity.

Bee-keeping demands, in a high degree, those moral qualities which are essential to excellence of character, self-command, patience, gentleness, industry, vigilance, attention to minute details, unswerving rectitude, kindness of heart, and evenness of temper. This is a galaxy of noble qualities, and that bee-keeping tends directly to their cultivation is a fact which "nobody can deny." Finally, this is peculiarly a home calling, prosecuted close to one's own threshold, away from the ten thousand temptations that haunt the shop, the factory, the street, the market. To pursue it, one is not obliged to forsake the loved ones at home, and live half or two-thirds of the time among strangers; he can have regular meals, and time to eat them; he can carry out the good old rule, "early to bed and early to rise;" and pursue the even tenor of his way without those breaks and interruptions which are fatal to family order, peace, and good government.

These hints may aid those who are debating the question whether to go into bee-keeping as a business or not. There is still the point of special personal adaptation to be considered.

"Every man can't be a poet,
No more than every sheep a go-at."

A business may be a good and paying one, but I may be entirely unsuited for carrying it on. If so, the part of wisdom is to pass it on to my neighbor. It may pay him, but not me to prosecute it. But for this

variety of adaptation, everybody would be crowding into the same line of things, and that division of labor which is necessary to the world's work being well and faithfully done, would not take place. There is no honest business that pays so much better than any and every other as to justify a universal rush into it. The lot of man is wisely equalized in this world, and when in harmony with the eternal fitness of things a person finds a place that suits him, and to which he is suited, he had better consider himself the right man in the right place, and stay there. But if there is a misfit, a square peg in a round hole, or *vice versa*, it is well to seek a change for the better, and there can be little doubt that many would find it in bee-keeping. That this business pays, in the broad and high sense which has been explained, is a fact, which is respectfully submitted to all those who are looking for a suitable vocation.

"The world is all before them where to choose,
And Providence their guide."

Should they make choice of bee-keeping, let us hope they will not get out of their latitude, or find it an uncongenial sphere, but that it may prove, in their case, "the way to be healthy, and wealthy, and wise"—above all, the way to be good, happy, and useful.

Guelph, Ont.

For the American Bee Journal.

Making Reversible Frames.

G. W. DEMAREE.

In Query, No. 204, J. C. asks for the "best and cheapest" way to make a frame that can be inverted. He also asks if it will pay him to change the frames in 60 hives. The answer to the last question is short and will be given first. It certainly will not pay you. Try a half dozen hives first, and find out for yourself that it will make "fuss" on your hands without corresponding returns.

To make a frame that can be inverted at will, make the end-bars $\frac{3}{8} \times 1\frac{1}{2}$ inches, and as long as you want your frames deep. "Inset" them on their edges like the one-piece section, and cut gains in their ends the right size to receive the ends of the long bars. Make the long bars (top and bottom bars) $\frac{3}{8}$ of an inch wide, and of a thickness to be in accord with depth or weight of the comb. The two long bars are of the same length. When the frame is nailed together it has no projecting top-bar. Now nail a block scant $\frac{3}{8}$ of an inch thick, $\frac{3}{8}$ of an inch wide, and exactly 1 inch long, to the outside of each end-bar, exactly in their centre.

If the work is accurately done, the bearings of the blocks will be just $\frac{1}{2}$ inch from the centre of the frame, up and down. Now nail a thin strip of wood on the inside, to the front and rear ends of the hive or case. You will see that when the frames are dropped into place, the end blocks

will rest on the strips, and the frames will work one side up as well as the other; and when the case is filled with these frames and "keyed up" tightly, there is no reason why the case might not be turned upside down if one should see any cause to do so.

The above plan of adjusting frames gives the bees perfect control of the interior of the hive, the bee-spaces being perfect all around the frames, a feature that can never be dispensed with where movable frames are used—especially in a warm climate. The central block device for supporting frames, originated with myself so far as I know, or care. At any rate it works splendidly in my shallow-frame cases, or sectional parts of hives.

Christiansburg, δ Ky.

For the American Bee Journal.

My System of Using Shallow Frames.

T. F. BINGHAM.

In response to the following which was sent to me from the BEE JOURNAL office for reply, I would offer the following remarks. Here is the query:

"EDITOR BEE JOURNAL:—I wish you would persuade T. F. Bingham to detail his management of his shallow frames—how he tiers them up, what he puts between the tiers, what he uses for an outer covering, etc.—TURNER BUSWELL, Solon, Me."

While Mr. Buswell's queries are in order, and like many that have been sent to me from all parts of the country, I must, just now, be excused from a lengthy answer to them.

The fastening which I use is an oblong link or loop made of small, soft iron-wire the length of the width of the hive used. Each end of each of the two movable sides of the hive contains one 10-penny nail, the head of which is left out about $\frac{1}{4}$ -inch; over these nails the wire link passes loosely. When the frames and sides are to be fastened together, a short piece of soft wood, square at each end, is put between the two sides of the link, and turned so as to hold them apart. The power is simply immense. Frames and sides thus bound together may be handled like a shallow box.

The division-board used between the sets of frames when tiered up any number above another, I call a "strip bottom-board." It is like the bottom-board that I use, except that it is made of strips $\frac{1}{4}$ of an inch thick, having $\frac{1}{4}$ -inch bee-passages between them. The outside cover is a box open at the bottom, the end pieces of which are wider than the sides and reach below the bottom-board when only one set of frames is used. The sides of the box rest on the top of the sides of the hive on a cleat, while the ends of the box pass loosely down by the ends of the frames and bottom-board, which protects the frames, etc., from storms, etc. The spare honey chamber, of course, is one of the objects of this box or cover, and is 6 in. high and of the size of the hive. Abronia, γ Mich.

For the American Bee Journal.

Ventilating Hives in Winter.

R. F. HOLTERMANN.

It appears to me that the proper way to ventilate hives may largely depend upon the place our colonies are in. If the colonies are in cellars or repositories, with the temperature sufficiently high, as Messrs. Barber, Hall, etc., have them, there is no necessity for upward ventilation, as the heat either drives off the moisture, or on account of the high temperature the atmosphere is able to hold more moisture. Should the temperature fall, the moisture would condense.

Whilst now it may be perfect wisdom to permit of no upward ventilation (or practically so) under these circumstances, it might be, and is, in my estimation, a great mistake to give bees wintered outside or in cold repositories, no upward ventilation, for the moisture condenses upon the interior and contents of the hive. I have frequently, even late in the fall, found moisture condensed in great drops upon the under side of enameled cloth of a propolis-covered quilt, and I never permit them to remain upon the hive after cool weather comes on.

But whilst I would under the above circumstances strongly condemn anything that would prevent a passage of moisture, I would as strongly advocate putting upon the top of the hive flannel, chaff, etc., to hinder the passage of the heated air as much as possible. True, if the moisture passes upward and out, the hot air must to a degree, but we have above the bees a substance which is practically known as an absorbent of moisture and a repeller (or confiner) of air. In our Canadian climate, from experience and observation, I would say, for outdoor wintering a clamp appears to me to be the best way to winter bees above ground. Chaff hives are expensive, unwieldy, inconvenient for manipulation, besides possessing many other disadvantages which more than cover the advantages.

Brantford, Ont.

The New Jersey and Eastern Beekeepers' Association will hold their ninth semi-annual convention at Cooper Union (Room 22) in New York City, on Wednesday, March 10, 1886, at 9:30 a.m. All who are interested in bee-culture or honey are respectfully invited to attend. We expect a large delegation from the Philadelphia Association to meet with us, and it promises to be one of the most interesting as well as instructive conventions that this Association has ever held. A special invitation is extended to ladies, well knowing that they are by no means a small factor in our industry. Beginners, it is well known, will learn more by attending one good convention than a year of practical experiments will teach them. All are requested to bring something to exhibit, and if you cannot come, send us an essay to read on some live subject. W. B. TREADWELL, Sec.

Are you Entitled to a pension? You may be and may not know it. If you examine the Guide and Hand-Book you will soon find out. Thousands of things worth knowing will be found in it. The BEE JOURNAL for 1886 and the Guide Book will both be sent for \$1.30.

Local Convention Directory.1886. *Time and place of Meeting.*Mar. 10.—N. Jersey & Eastern, at N. Y. City, N. Y.
W. B. Treadwell, Sec., 16 Thomas St., New York.Apr. 10.—Union, at Dexter, Iowa.
M. E. Darby, Sec., Dexter, Iowa.Apr. 27.—Des Moines County, at Burlington, Iowa.
Jno. Nau, Sec., Middletown, Iowa.Oct. 19, 20.—Illinois Central, at Mt. Sterling, Ills.
J. M. Hambaugh, Sec., Spring, Ills.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

**SELECTIONS FROM
OUR LETTER BOX****Bees Quiet in the Cellar.**—T. F. Kinsel, Shiloh, O., writes:

My bees are in the cellar. The temperature is never higher than 44° Fahr., and never as low as 32°. They are very quiet yet; with my ear against the hives I can always hear them—day or night. Are they hibernating? Do bees snore in their sleep?

[We give it up. Ask us something easier, next time.—ED.]

Pleasant Weather Again.—G. M. Doolittle, Borodino, O. N. Y., on Feb. 9, 1886, says:

The cold weather has ended, and to-day the bees had a fine flight, with the mercury at 51° in the shade. All of my bees had a flight except one colony that died about Feb. 1, with the diarrhea, contracted about the middle of October. There is something about this disease that none of us understand yet.

Varnish Barrels for Honey.—T. J. C., Cincinnati, O., asks the following question:

Would barrels that had copal varnish in them, be good to keep honey in, if they were cleaned out and then waxed?

[By no means. The honey would be spoiled.—ED.]

Bee-Keeping in Texas.—C. Beal, Columbia, O. Texas, on Feb. 7, 1886, writes:

I have received a vast amount of useful knowledge in bee-culture from the perusal of the AMERICAN BEE JOURNAL. Cook's Manual is worth its weight in gold to any man, though he has but a few colonies of bees. Honey is so plentiful here that we let the bees live on their natural stores. The 10-frame Langstroth hive is good enough for me. Myself and Mr. Jesse Parks formed a partnership in the bee-business last spring, he furnishing the bees and the hives in flat, and I doing all the work. The honey was

equally divided. I extracted about 275 gallons. I commenced last spring with 70 colonies, increased them to 130, lost 7 by the combs melting down and by the moth. All my old colonies were in box-hives, and my young colonies are in Langstroth and Gallup hives. My apiary is on the banks of the Brazos river. We had 5 overflows during spring and summer, which was a big drawback to bees gathering honey. My bees, for the last 10 days, have been carrying in pollen. They are all blacks, and become very cross sometimes, but with a Bingham smoker I can soon quiet them. Last October I introduced 4 Italian queens successfully, and now the young Italians are working nicely.

Feeding Bees for Winter, etc.—J. H. Andre, Lockwood, N. Y., on Feb. 10, 1886, writes:

On page 59 I spoke of putting 3 colonies into winter quarters which had been fed late in the fall, and cold weather shut the young bees in without their having a flight. It is conceded that such colonies will not stand the winter well on account of pollen eating, but it is nearly 3 months since they have had a flight, and I carried them out for a flight to-day, and so far as I could see they were all right, and spot the snow but very little. One of them was fed for a week or more, probably 8 or 10 pounds of syrup. I do not see how Mr. Dadant could have told any more plain facts in the same amount of space than he did on page 75. It is my opinion that good honey is the most natural food for bees, and I cannot see where the profit comes in by extracting all the honey and then feeding all winter. I noticed on a neighbor's farm a willow tree that did not blossom until after fruit-blossoms were gone. It is the only one I ever saw in this vicinity. The bees were working upon the blossoms in a perfect swarm. It would be a valuable acquisition to our bee-pasture here, as it blossoms between fruits and white clover. I would like to hear its name through the BEE JOURNAL, and whether it is planted in any place purposely for its honey-producing qualities.

Good Prospect for Clover.—John Nebel & Son, High Hill, O. Mo., on Feb. 10, 1886, write:

Our bees seem to have stood the winter pretty well so far. They had a good cleansing flight on Feb. 7 and 8, the mercury being as high as 50° above zero, and the 6 inches of snow which has been on the ground since Jan. 8, has all melted. The snow has proven a blessing in protecting the clover this winter, as it is alive and looks as if there would be a good crop this season. We never have much of a clover crop when the earth is bare and the weather extremely cold, as it has been the past month, the mercury being as low as 20° below zero, and for five days 11° and 12° below. We notice that the bees have wintered better during the past cold spell than ever before. As they had no flight

for 6 weeks we thought some of them would be in poor condition, but we find that very few dead bees have been carried out, and they have not spotted the snow as much as they usually do when being confined so long. They are wintering on the summer stands packed in chaff. Those in cellars are resting quietly. Although it is not over yet, we feel safe now in getting our bees through the winter.

Strengthening Weak Colonies.—H. R. Boardman, East Townsend, O., on Feb. 18, 1886, writes:

I protest against the plan mentioned by W. Z. Hutchinson, in his reply to Query, No. 201. It certainly will result in disaster to change places with 2 colonies of bees in early spring when honey is not coming in. I have had queens killed and large numbers of bees destroyed by making such changes when I considered it very fair honey weather. My advice to beginners would be, to be a little cautious about changing places with colonies except in the height of the honey gathering.

An Original Invention.—Wm. A. Stolley, Grand Island, O. Nebr., wishes to give this testimony:

I have read Mr. Demaree's article on page 102, and I feel it my duty to testify that I was employed by Mr. Heddon during the year 1884, and I am personally acquainted with the development of his latest invention, for many of his experiments were placed in my charge. I know that the idea of a brood-camber in two parts originated with him, and I remember just when, where and how. I further know that the idea of thumb-screws for clamping frames was original with him, though we found it had been previously used in bee-hives, but not as (nor for the purpose) he uses it. Simple justice compels me to say that I never saw any one more careful and conscientious about copying the work of another. I think he would as soon steal wood, as the results of another's mental labor. His students know, and will testify to the truth of these statements.

Finding Queens.—Warren Pierce, Garrettsville, O., writes:

Although the answers given to Query, No. 195, are sufficient for the expert, and will work especially well with Italian bees, yet for a crowded colony of blacks or cross hybrids, and an inexperienced hand, I think I can suggest a better plan, as follows: A short time before you wish to remove the queen, examine the hive and see that the honey-board, quilt or enameled-cloth which covers the brood-chamber, is not propolized down, but can be removed without delay. Then after they have become quiet, give them a few good puffs of smoke, and in a few seconds remove the quilt carefully and look among the bees on top of the frames. If you

do not find her there, she will doubtless be found among the bees adhering to the quilt. With a little practice to learn the right quantity of smoke to use, and the time it will require the queen to run to the top of the hive, any one will be able to find a queen in this way nine times out of ten without removing a frame.

A "Sweet Hum."—John Rey, East Saginaw, Mich., Feb. 18, 1886, says:

My bees had a fine time last week; they were flying for 4 days, and cleaning house in general, and preparing for another cold spell. I think that the bees that are wintered on the summer stands, in this section, will fare better than they did last winter. They are in good condition so far.

Very Much the Best.—D. Videto, of North East, Pa., writes thus:

I have always read with great interest all the writings of Mr. G. M. Doolittle, because he gave us instructions which I thought were new and valuable, until I read what he said on page 83, viz.: "I do not know but there could be a better Bee Journal gotten up than the one you publish, but so far there never has been." Now I think that Mr. Doolittle was positively conscious that everybody that reads bee-papers at all knows this to be a fact; only he should have stated that it is VERY MUCH the best.

Bees Doing Well.—14—J. V. Caldwell, (125—165), Cambridge, Ill., on Feb. 9, 1886, says:

In the fall of 1884 I had 156 colonies of bees; in the spring of 1885, 125 colonies, those lost having dwindled. I increased the 125 colonies to 165, during the season, and obtained 2,800 pounds of comb honey, or about 22½ pounds per colony, spring count. The average price per pound that I received for my honey was 13 cents. Our honey season was cut short by dry weather in July, and we had no fall crop. My bees are all in a beehive and cellar, and are doing well, so far as I can judge, as they are packed in closely.

Bee-Keepers are Jubilant.—Smith & Smith, Kenton, O., on Feb. 15, 1886, write:

Bees have had a fine flight the past week, and are in good condition. On the morning of Feb. 8 the sun rose brightly, with a south breeze soft and balmy; by 12 m. the mercury went up to 50° in the shade, and the bees had a good flight. On Feb. 9, 10 and 11 the weather was clear and warm, and the bees have cleaned out their hives, etc. Very few dead bees were brought out. The bees look clean, bright and healthy. We have talked with quite a number of bee-keepers, and they all report well. We have not heard of a single colony being lost so far. Bee-men all feel jubilant. We have almost all our bees in a cellar, and they are very quiet, and seem to be in splendid condition.

Bees had a Splendid Flight.—T. F. Bingham, Abironia, Mich., on Feb. 15, 1886, writes:

My bees on the summer stands had a splendid flight last week, and have wintered finely so far. They cared very little about flying, though they had no flight for 3 months. In the cellar as well as out-doors, there were hardly any dead bees, and it was as still as a summer eve, though 3 months in the cellar on 5-inch frames. It would please any one to see them cluster below the combs in the open space allowed them for the purpose.

Gathering Pollen.—7—Z. A. Clark, (85—157), Arkadelphia, Ark., on Feb. 16, 1886, writes as follows:

My bees brought in the first pollen on Feb. 13 and 14—about the same time for the past two years. I have lost about 5 per cent. of my bees up to this time, but from now until honey comes in it will require careful attention. Alder is now in bloom; elm and maple are nearly open, and if we have pleasant weather we do not anticipate much trouble. My bees are now beginning to build up. I take out the outside combs that are empty, and replace them with frames having foundation starters in the centre of the brood-nest a little later, and have nice frames of worker combs built. While the colonies are weak they will build worker comb.

Bees Wintering Nicely, etc.—J. H. Tait, Endicott, Nebr., on Feb. 11, 1886, writes:

My bees are thus far wintering nicely, with the exception of 3 colonies that have been very restless for a week or more. I use the Langstroth hive with the portico, and on putting them into the cellar I confined them by wire-screens over the entire fronts of the hives. The 3 colonies referred to filled the fronts and kept beating against the wire until a large number of the bees had perished. I removed the wire, second-story and sheet, scraped out the dead bees and left them for a half hour, and upon returning I found them quiet and apparently happy and contented; there is no indication of disease among them. The remaining 20 colonies are perfectly quiet. The average temperature of my cellar is from 40° to 45°. All my bees have natural stores. Will any of the prominent apiarists please state the cause of the disturbance with these 3 colonies?

When Renewing your subscription please try to get your neighbor who keeps bees to join with you in taking the BEE JOURNAL. It is now so cheap that no one can afford to do without it. We will present a **Binder** for the BEE JOURNAL to any one sending us four subscriptions—with \$4.00—direct to this office. It will pay any one to devote a few hours, to get subscribers.

The Southern Wis. Bee-Keepers' Association will hold its 3rd. annual meeting at the court-house in Janesville, Wis., on March 9, 1886, at 10 a.m. All interested are invited. JOHN C. LYNCH, Sec.

Honey and Beeswax Market.

Office of the AMERICAN BEE JOURNAL,
Monday, 10 a. m., Feb. 22, 1886.

The following are the latest quotations for honey and beeswax received up to this hour:

CHICAGO.

HONEY.—Sales have been quite good this month for best grades of comb honey, some bringing 16c. per pound when in perfect order. There is a light supply here, and now is a favorable time to forward shipments. Extracted honey brings 6½c. **BEESWAX.**—25¢@26c. per lb.
R. A. BURNETT, 101 South Water St.

NEW YORK.

HONEY.—We note an improvement of sales of honey the past week, but prices continue to rule low. We quote as follows: Fancy white comb in 1-lb. paper cartons, 13¢@14c; the same in 1-lb. glassed or unglassed sections, 12¢@13c; the same in 2-lb. glassed sections, 9¢@10c, and fair to good in glassed 2-lbs., 8¢@9c. Fancy buckwheat honey in 1-lb. unglassed sections, 10c; the same in 2-lb. sections, glassed, 8¢@9c. Extracted, white, 6½¢@7c; buckwheat, 5¢@6c. **BEESWAX.**—27¢@28c.
MCCAUL & HILDBRETH BROS., 34 Hudson St.

ST. LOUIS.

HONEY.—The market is quiet and the demand light just now. We quote prices as follows: Choice comb honey, 10¢@12c. Extracted, in barrels, 4½¢@5c. Extra fancy of bright color and in No. 1 packages, ¼ advance on above prices. **BEESWAX.**—Firm at 22½c. for prime.
D. G. TUTT & CO., Commercial St.

CINCINNATI.

HONEY.—The demand is extremely slow for extracted honey. Manufacturers seem to have taken a rest. There is only a fair demand for honey in glass jars, and for comb honey. Prices are unchanged and nominal, with occasional arrivals and a large stock on the market. We quote extracted honey at 4¢@5c., and choice comb honey at 12¢@14c. in a jobbing way. **BEESWAX.**—There is a good home demand for it. We pay 25c. per lb. for choice yellow.
C. F. MUTH & SON, Freeman & Central Ave.

CLEVELAND.

HONEY.—The market is not quite as active as it has been, owing, no doubt, to many attractions of the Holiday Season. Best white, 1-lb. sections sell at 15c., and 2-lbs. for 13¢@14c., but there is not so much sale for the latter. Second grade honey is dull at 12¢@13c. Old white, 10¢@12c. Extracted, 7¢@8c. per lb. **BEESWAX.**—Very scarce at 22¢@25c.
A. C. KENDEL, 115 Ontario Street.

KANSAS CITY.

HONEY.—The market continues about unchanged, except that stocks are somewhat reduced, and possibly a little firmer feeling on extracted honey. The demand, however, is not heavy for this time of the year, and we cannot expect any better prices, as no one seems inclined to hold, and concessions are made in the buyer's favor. Choice 1-lb. sections of comb honey, 15¢@16c; 2-lbs., 12¢@14c. Extracted, 5¢@7c., according to quality. **BEESWAX.**—It is in very light supply, and it would bring 22¢@25c. for good average grades.
CLEMONS, CLOON & CO., cor. 4th & Walnut.

BOSTON.

HONEY.—The sale for honey for the past month has been as light as we have ever known it, and prices are weak. One-pound, white clover, 13¢@15c; 2-pound sections, 11¢@13c. Extracted, 6¢@8c. **BEESWAX.**—30 cts. per lb.
BLAKE & RIPLEY, 57 Chatham Street.

SAN FRANCISCO.

HONEY.—The market is very dull. We quote as follows: White and extra white comb, 11¢@13c.; dark comb, 8¢@9c. White extracted, 5¼¢@5½c.; amber, 4¼¢@4½c.; dark and candied, 3¼¢@4c. **BEESWAX.**—Quotable at 23¢@25c., wholesale.
O. B. SMITH & CO., 423 Front Street.

DETROIT.

HONEY.—The market is well supplied with comb honey and prices have declined. Best white in 1-lb. sections, 14c.; honey in larger sections can be bought for less. **BEESWAX.**—23¢@25c.
M. H. HUNT, Bell Branch, Mich.

The Western World Guide and Hand-Book of Useful Information, contains the greatest amount of useful information ever put together in such a cheap form. The printing, paper, and binding are excellent, and the book is well worth a dollar. To any one sending us two new subscribers besides their own, with \$3, for one year, we will present a copy of this valuable book.



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 At One Dollar a Year.

ALFRED H. NEWMAN,
 BUSINESS MANAGER.

Special Notices.

To Correspondents.—It would save us much trouble, if all would be particular to give their P. O. address and name, when writing to this office. We have several letters (some inclosing money) that have no name; many others having no Post-Office, County or State. Also, if you live near one post-office and get your mail at another, be sure to give the address we have on our list.

Golden Rules for successful advertising, are these: 1. Attractive display. 2. Salient points clearly stated. 3. Repetition. Don't spend all your money in one insertion. 4. Choice of the Paper which reaches the people you want to reach. *These rules never fail.*

Wire Nails have advanced in price, as will be seen by quotations on page 127, last column.

Our New Catalogue of Bee-Keepers' Supplies for 1886 is issued, and will be sent to any one desiring a copy. Send name and address, plainly written, on a Postal Card for it.

Beeswax Wanted.—We are now paying 24 cents per pound for good, average, yellow Beeswax, delivered here. Cash on arrival. Shipments are solicited. The name of the shipper should be put on every package to prevent mistakes.

Perforated-Zinc.—We have laid in a stock of perforated zinc, for excluding drones and queens, and can fill orders for any size of pieces or quantity at 15 cents per square foot, or in full sheets 3x8 feet at \$2.75 per sheet. We also have pieces cut to fit the Langstroth hive—19½x14½—Price 25 cents each.

Extracted Honey.—Any one having white extracted honey for sale, are invited to correspond with us. We are paying 7 cents per lb. for it, delivered here.

When renewing subscriptions please send an extra name or two with your own and secure a premium. We have some colored Posters, which we will send FREE, to put up in conspicuous places. We will with pleasure send sample copies to any one who will try to get up a club.

Advertisements.

The NEW Heddon Hive.

We have made arrangements with the inventor by which we shall make and sell the Heddon Reversible Hive, both at wholesale and retail; nailed and also in the flat.



The engraving gives a good idea of the hive. The brood-chamber is in two sections; also the surplus arrangement, which may be interchanged or inverted at will. The cover, bottom-board, and top and bottom of each sectional case has one-half of a regular bee-space, so that the surplus cases with the sections, may be placed between the two brood-chambers, or the latter may be transposed or inverted—in fact, all parts of this hive are perfectly interchangeable. The brood-frames will ALL be bored for wires.

A SAMPLE HIVE includes the bottom-board and stand; a slatted honey-board, and cover; two 6-inch brood-chambers, each containing 8 frames; two surplus arrangements, each containing 28 one-pound sections, one with wide frames and separators, and the other without separators. This latter chamber can be interchanged with the other stories, but cannot be reversed. It is NAILED AND PAINTED, and ready for immediate use. Price, \$14.00, complete.

HIVES READY TO NAIL.—In filling orders for these hives, in the flat, we make 6 different combinations, so that our customers may make a selection from the sample nailed hive, without waiting for us to quote prices, and the different kinds will be known by the following numbers:

No. 1 consists of the stand, bottom-board, cover, two 6-inch brood-chambers, 16 frames, and the slatted honey-board. Price, \$11.55 each.

No. 2 is the same as No. 1, with the addition of one surplus story containing 28 sections without separators—interchangeable, but not reversible. Price, \$22.00 each.

No. 3 is the same as No. 2, with two surplus stories as therein described. Price, \$32.50 each.

No. 4 is the same as No. 1, with the addition of one surplus story containing 28 sections in wide frames with separators, which can be reversed, inverted, and interchanged, the same as the brood-chambers. Price, \$22.30 each.

No. 5 is the same as No. 4, with two surplus arrangements as therein described. Price, \$33.00.

No. 6 contains all the parts as described in the sample nailed hive. Price, \$32.75 each.

Those desiring the hives without the stand, honey-board or sections, may make the following deductions from the above prices: Stand, 14 cents; honey-board, 8 cents; and the 28 or 56 sections, as the case may be, at 4 cent each, respectively.

We will also make the following deductions on quantities ordered all at one time: For 10 or more hives, 5 per cent. discount; for 25 or more hives, 7 1/2 per cent.; for 50 or more, 10 per cent.

It is absolutely essential to order one nailed hive as a pattern for putting those in the flat together correctly.

THOS. G. NEWMAN & SON,
 923 & 925 West Madison St., CHICAGO, ILL.

Good News for Dixie!

SIMPLICITY HIVES,
 Sections, Extractors, Smokers, Separators, &c., of Root's Manufacture, shipped from here at his prices.

Also 8 hives of Southern yellow pine, and Bee-Keepers' Supplies in general. Price List Free. **J. M. JENKINS,**
 8A4t Wetumpka, Ala.

W. Z. HUTCHINSON,

In order to more fully supply the wants of his customers, has entered into partnership with his neighbor, R. L. Taylor, and will offer for sale, bees (full colonies, or by the pound), queens, Given foundation, white poplar sections, hives, cases, feeders, empty combs, etc., etc. Also hens' eggs, for hatching, of three varieties. For circular and price-list, address **W. Z. HUTCHINSON,**
 8E4t ROGERSVILLE, Genesee Co., MICH.

40 COLONIES of ITALIAN BEES for SALE, together with extra hives, frames and utensils. I intend to move away in the spring. Terms given upon application. **L. ADAMS,**
 8E3t MAYFAIR, Cook Co., ILLS.



Orders filled the day they are received, except for bees and queens. 8E4t

SEND FOR IT.

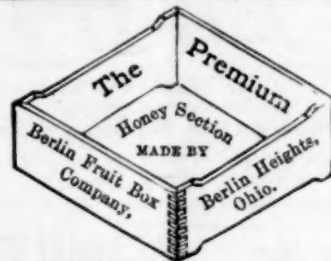
We have just issued a new Circular that will interest any bee-keeper. Send your name on a postal card for it.

Cash paid for Beeswax.

A. B. HOWE,
 8A4t COUNCIL BLUFFS, IOWA.

Dadant's Foundation Factory, wholesale and retail. See Advertisement in another column.

NOTICE.—For \$3.00 I will mail direct, Frank Cheshire's great scientific work now publishing in parts, "Bees and Bee-Keeping."—Arthur Todd, Dadant Foundation Depot—Germantown, Pa. 6A4t

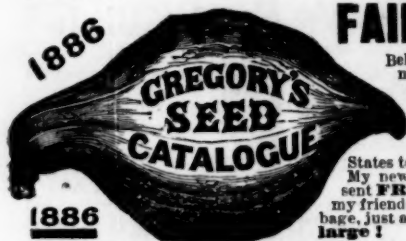


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FOR SALE.—120 Colonies of Bees—mostly Italians. If desired a place in connection of 20 acres can be bought or rented for a term of years, inside corporation of 6,000 inhab. 2 1/2 acres grape vineyard, 3 acres apple orchard, 1 acre pear orchard, and a quantity of small fruit; buildings in good condition. For particulars address, **G. C. SUDEN,** Canandaigua, N. Y. 8A1t

FOR SALE or RENT

45 COLONIES of Bees, with ample facilities on hand for the accommodation of all the Increase and Surplus. Preparations mostly for extracted honey, though either or both may be worked for to advantage. Safe and convenient wintering repository, good pasture and location, 7 miles north of Omaha. **N. PEARSON,**
 8A1t (Concord Apiary), FLORENCE, NEBR.



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Believing that if a man has dealt squarely with his fellow-men his patrons are his best advertisers, I invite all to make inquiry of the character of my seeds among over a million of Farmers, Gardeners and Planters who have used them during the past thirty years. Raising a large portion of the seed sold, (few seedsmen raise the seed they sell) I was the first seedsmen in the United States to warrant (as per catalogue) their purity and freshness. My new Vegetable and Flower Seed Catalogue for 1886 will be sent **FREE** to all who write for it. Among an immense variety, my friends will find in it (and in none other) a new drumhead Cabbage, just about as early as Henderson's, but nearly twice as large!

James J. H. Gregory, Marblehead, Mass.

BEE-KEEPERS' GUIDE;

Or, MANUAL OF THE APIARY.

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A. J. COOK, Author and Publisher.
1A1y Agricultural College, Mich.

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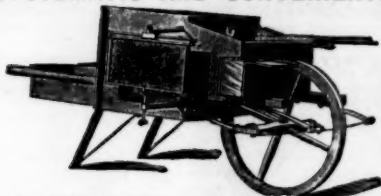
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DAVIS' PATENT HONEY CARRIAGE,

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Western BEE-KEEPERS' Supply House.



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We manufacture Bee-Keepers' supplies of all kinds, best quality at low prices. Hives, Sections, Comb Foundation, Extractors, Smokers, Crates, Honey Buckets, Veils, Feeders, Bee-Literature, etc., etc. Imported Italian Queens, Italian Queens, Bees by the lb., Nucleus or Colony. "Bee-Keepers' Guide, Memoranda and Illustrated Catalogue" of 45 pages FREE to Bee-Keepers. Address JOSEPH NYSEWANDER, DES MOINES, IOWA.

Muth's Honey Extractor,

Perfection Cold-Blast Smoker,

SQUARE GLASS HONEY-JARS, etc.

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Freeman & Central Ave. - CINCINNATI, O.
P.S.—Send 10c. for Practical Hints to Bee-Keepers

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INVERTIBLE FRAMES,
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